

Work Order ID 84515

May-15-12 10:39:07 AM

84515

Page 1

SHIP JUNE 8

Item ID: D3391-013

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Mid Tube Assembly

Start Date: 15/05/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 06/06/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan: MLS

Date: 12/05/15

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D3391

I

100

0.00

100

Skidtubes

Skidtubes

0.00

Skidtubes

Memo

1-Cut tube to finish length as per Dwg D3391

2-Identify as D3391-013

3-Drill pilot holes using DT8796 (including "B" holes) and drill only 1 fwd saddle hole on one side only as per Dwg D3391

4-Open saddles and GHW holes to Ø0.375" except for fwd saddle hole of detail "J"

5-Remove .030" from Fwd indexing Ridge as per Dwg D3391

6-Remove indexing ridge on Fwd & Aft end of skidtube as per Dwg D3391

7-Debur

8-Drill #30 pilot holes using wearplate Jig DT8217 Identify Ø0.250" holes with paint marker,

9-Open wearplate holes of D3391-013 assembly detail section G-G to Ø0.250" (14 holes) as per Dwg D3391 and 2 holes in section Detail "J", do not open wearplate holes of section "J"

10-Open wearplate holes of D3391-013 assembly detail section H-H to Ø0.297" (20 holes) as per Dwg D3391

De 12/05/22

De 12/05/29

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Setup Start ***NS1***

Stop ***NS2***

Start Date: 15/05/2012 Start Qty: 1.00

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Cust Item ID:

Required Date: 06/06/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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11-Open .375" holes to .438" ***do not open fwd saddle holes***

12- Locate electric step holes at 39.6875" from fwd end and drill using DT 9612

13-Locate D3391-021 in D3391-023 at 9.00" (see view z-z)

14- Transfer drill one fwd saddle hole only to .188" dia, transfer drill all remaining fwd saddle holes using DT 8149 locating from previously drill .188" dia hole, using t-pins and clicos to ensure perfect allingment, open up previously tranfer drilled pilot holes in D3391-013/-011 to 0.438" dia. in D3391-011

~~15- Transfer drill 2 wearplate holes into D3391-011 using DT8217, locating from two previously drilled holes, drill remaining wearplate holes into D3391-011.~~

16- Locating from two fwd wearplate holes drill remaining 6 wearplte holes in D3391-011 using DT8937

~~17- Open 2 fwd wearplate holes in D3391-013 to .250" dia.~~

~~18- counterbore two aft wearplate holes in D3391-011 as per dwg~~

19- Open ¹⁰ wearplate holes in D3391-011 to 0.297" dia.

20- Deburr and blow out all chips from inside tube

12/05/29

12-6-05

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Accept

N900040100

Setup Start *NS1*

Stop *NS2*

Start Date: 15/05/2012 **Start Qty:** 1.00

*** 1 ***

Cust Item ID:

Required Date: 06/06/2012 Req'd Qty: 1.00

*** 1 ***

Customer:

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Operation Description

Set Up/ Run Hours

Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
---------	--------	-----------	------------	------------	---------------	-------------

110

QC5- Inspect part completeness to step on W/O

0.00

110

0.00 *S. holacanthus*

QC

Memo

0.00

Quality Control

120

Chemical Conversion Coat per QSI005 4.1

0.00

120

0.00

HandFinish

Memo

Hand Finishing

130

QC3- Inspect Part Finish

0.00

130

0.00

QC

Memo

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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 Required Date: 06/06/2012 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	Skidtubes	0.00				1	0	CF 12-6-6	
140									
Skidtubes	Memo	0.00							
Skidtubes	1- Open holes to finish size as per dwg.								
	2- Prepare for welding								
	3- Bond web in place as per Dwg D3391 & QSI 015.								
	*****Ensure Web Aligment *****								
	A/R Sikaflex Batch: M121049								
	Exp. date: 13-4-12								
150	QC5- Inspect part completeness to step on W/O	0.00				1	0	BE 12/6/07	
150									
QC	Memo	0.00							
Quality Control	Inspect each piece using D3391								

W/O:		WORK ORDER CHANGES					
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 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160 *160* Skidtubes	Skidtubes	0.00							
	Memo	0.00							
	1-Weld crossbolt spacer as per dwg D3391 & QSI 004 A/R ALUM Batch: <i>M 120 854</i>			<i>BE 12/06/07</i>					
	2-grind weld flush								
	3- Transfer drill electric step pilot holes only from D3391-013 into D3391-015								
	4- Open electric step holes 0.391" per dwg D3391 (section L-L)								
	5- Open electric step holes 0.297" per dwg D3391 (section M-M)								
	6- Open electric step holes 0.250" per dwg D3391 (section LL-LL)								
170 *170* QC	QC10- Inspect visual per QSI004- ground welds	0.00							
Quality Control	Memo	0.00		<i>S. Zela</i>					

DL 12/06/07

W/O:		WORK ORDER CHANGES					
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 Reference:

Approvals: Process Plan: Date: Tooling: Date: Run Start ***NR1***
 QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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180 *180* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00		<i>5/2/12/12</i>					
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185 *185* HandFinish Hand Finishing	Pressure Wash per QSI005 4.3 Memo AND REALODINE AS PER PAR09-043	0.00 0.00							<i>1 7/6 12-6-7</i>
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190 *190* Powdercoat Powder Coating	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum Memo ***Use paint screws to mask inserts.*** START TIME: <i>2:20</i> OVEN TEMPERATURE: <i>320 F</i> FINISH TIME: <i>2:50</i>	0.00 0.00							<i>1X ✓ 12/06/07</i>
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M121134

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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 Start Date: 15/05/2012 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 06/06/2012 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
200 *200* QC Quality Control	QC3- Inspect Part Finish Memo	0.00 0.00				1x	4	11	11/06/12
210 *210* Skidtubes Skidtubes	Skidtubes Memo 1- insert D3391-011 into D3391-13 2- insert T-pins into first and third fwd saddle holes 3- ON FIRST SIDE ONLY drill out 2nd and forth fwd saddles holes to 0.500" as per DSI 9364 4- remove T-pins and locate DT9415 from first and third crossbolt hole using T-pins and clekos 5- ON 2ND SIDE ONLY ream out 2nd and forth saddle hole to 0.499". Remove DT9415 6- deburr, re-alodine and blow out chips 7- press fit D3391-1 spacers using DT9416 starting from 0.500" side	0.00 0.00				1x	4	11	11/06/12

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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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 Start Date: 15/05/2012 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 06/06/2012 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220	QC5- Inspect part completeness to step on W/O	0.00							
220 QC Quality Control	Memo	0.00		8.7/6.12					
230	HandFinishing	0.00							
230 HandFinish Hand Finishing	Memo Install inserts	0.00							1x 4 11 n10614
240	QC5- Inspect part completeness to step on W/O	0.00							
240 QC Quality Control	Memo Inspect thread of each insert using DT8821	0.00		8.7/6.12					

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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Item ID: D3391-013 Accept ***N900040100*** Setup Start ***NS1***
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 Required Date: 06/06/2012 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
250	HandFinishing	0.00							
250	HandFinish	0.00				1x	1	11	12/06/12
Hand Finishing	✓ Memo Assemble as per dwg D3391								
260	QC5- Inspect part completeness to step on W/O	0.00							
260	QC	0.00							
Quality Control	Memo								
270	Identify as per dwg & Stock Location: <u>w10</u>	0.00							
270	Packaging	0.00							
Packaging	Memo					1x	1	11	12/06/12

8/2/06/12

0412-742-041 / B 84524

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Work Order ID 84515

84515

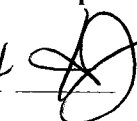
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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
280	QC21- Final Inspection - Work Order Release	0.00							
280									
QC	Memo	0.00							
Quality Control									

12/6/14 

MF
12-06-12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Picklist Print

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Work Order ID: 84515

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Parent Item: D3391-013

D3391-013

Parent Item Name: Mid Tube Assembly

Start Date: 15/05/2012

Required Date: 06/06/2012

Start Qty: 1.00

Required Qty: 1.00

Comments:

IPP A05.12.13New IssueEC
 IPP B06.02.09Dwg rev.D EC
 IPP Rev:06-03-28 Update Manufacturing Instructions JLM
 IPP rev D 07.03.14 dwg Rev F EC
 IPP Rev:E ECN 1056 07-11-13 DD verified by: EC
 IPP Rev:F 08-07-28 chg 0.332" to 0.391" dim. hole in comment DD verified by:EC
 IPP Rev:G 08-09-08 new process (ecn 08-510) DD verified by:EC
 IPP Rev:H 08-09-10 revH as per dwg DD verified by:EC IPP rev J
 10.03.30 revised process, added D3391-015 to pick list EC verified : DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
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AN960C10L NAS1149C0332 Purchased No

***AN960C10I *** X

washer

D3672-1 Manufactured No

D3672-1 / 10/12

Phenolic Washer

Location

Loc Qty

Loc Code

ST060

1214

72229

4

76277

210

80369

500

83608

500

D2500-1-100 Manufactured No

100

Each

85.0000

1

1

D2500-1-100

Skidtube Extrusion

Location

Loc Qty

Loc Code

HALL

85

50251

12

82373

73

**

11121509 (x4) JLM 12/06/14

**

**

Dec 12 / 05 / 22

①

W/O:		WORK ORDER CHANGES					
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Picklist Print

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Parent Item: D3391-013

D3391-013

Parent Item Name: Mid Tube Assembly

Start Date: 15/05/2012

Required Date: 06/06/2012

Start Qty: 1.00

Required Qty: 1.00

MS27039C4-08

Purchased

No

100

Each

98.0000

4

4

MS27039C4-08

SCREW

**

12/06/12

Location

Loc Qty

Loc Code

FP002

7

17831

7

ST293

91

114721

91

D3391-011

Manufactured

No

140

Each

0.0000

1

1

D3391-011

Fwd Tube Assembly

D3391-015

Manufactured

No

160

Each

0.0000

1

1

D3391-015

Aft Tube Assembly

D3681-1

Manufactured

No

160

Each

87.0000

12

12

D3681-1

Spacer

**

12-6-5

**

12-6-5

**

BE 12-06-07

Location

Loc Qty

Loc Code

LG

77

80361

1

84053

76

LG001

10

68958

2

69893

2

71845

2

74874

1

76004

1

77501

2

12

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Shop Packet Print

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W/O:		WORK ORDER CHANGES					
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Picklist Print

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Parent Item: D3391-013

D3391-013

Parent Item Name: Mid Tube Assembly

Start Date: 15/05/2012

Required Date: 06/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3389-1

Manufactured No

210

Each

6.0000

1

1

D3389-1

Web

**

CF 12.6-6

Location

Loc Qty

Loc Code

LG

6

82389

2

83848

4

ALS4-1032-225

Purchased

No

230

Each

904.0000

10

10

AI S4-1032-225

Insert

**

12/06/12

Location

Loc Qty

Loc Code

ST281

881

108696

146

110768

62

118386

55

118966

68

121269

550

ST282

23

120410

10

120451

13

ALS4-428-165

Purchased

No

230

Each

453.0000

4

4

AI S4-428-165

Inserts

**

12/06/12

Location

Loc Qty

Loc Code

FP002

453

114172

18

117769

435

May-15-12 10:39:11 AM

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Page 3

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 4

Work Order ID: 84515

84515

Parent Item: D3391-013

D3391-013

Parent Item Name: Mid Tube Assembly

Start Date: 15/05/2012

Required Date: 06/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3591-1 Manufactured No

230 Each 104.0000 2 2

D3591-1

Bushing

**

Handwritten: 12/06/11 PTO =)

Location

Loc Qty

Loc Code

FP	5	
80377	4	
82027	1	
ST055	99	
57350	1	
83237	98	

ALS4-1032-130 Purchased No

250 Each 3,301.000 26

AI S4-1032-130

Insert

**

Handwritten: 26 24, 12/06/11

Location

Loc Qty

Loc Code

ST280	205	
119084	116	
120671	89	
ST281	174	
120807	36	
120837	138	
ST282	2922	
121269	2922	

AN3C4A Purchased No

250 Each 1,969.000 10 10

AN3C4A

BOLT

**

Handwritten: N/A

Location

Loc Qty

Loc Code

ST350	1969	
120187	63	
120521	28	
120769	38	
121205	1000	
121556	840	

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Page 4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
12/06/11	210	Scrap "1x" 03591.1 / B83237 bushing To improper fit.	gl	12/06/11	X1		

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

May-15-12 10:39:11 AM

Page 5

Work Order ID: 84515

84515

Parent Item: D3391-013

D3391-013

Parent Item Name: Mid Tube Assembly

Start Date: 15/05/2012

Required Date: 06/06/2012

Start Qty: 1.00

Required Qty: 1.00

AN960C10L NAS1149C0332 Purchased No 250 Each 0.0000 10 10

AN960C10L *rel* ******
washer

AN960C416L Purchased No 250 Each 0.0000 4 4

AN960C416L *X NAS1149C0432 R / M121255* ******
WASHER

D3401-041 Manufactured No 250 Each 13.0000 1 1

D3401-041 *old* ******
Tow Cap Assembly

Location	Loc Qty	Loc Code
FP002	13	
78990	1	
82302	12	

D3564-13 Manufactured No 250 Each 30.0000 1 1

D3564-13 *old* ******
Wearshoe

Location	Loc Qty	Loc Code
FP001	1	
71594	1	
FP002	29	
80342	7	
82249	22	

D3566-13 Manufactured No 250 Each 19.0000 1 1

D3566-13 *old* ******
Gasket

Location	Loc Qty	Loc Code
FP	12	
83351	12	
FP002	7	
76947	7	

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Page 5

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Page 6

Work Order ID: 84515

84515

Parent Item: D3391-013

D3391-013

Parent Item Name: Mid Tube Assembly

Start Date: 15/05/2012

Required Date: 06/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3672-1

Manufactured

No

250

Each

1,214.000

4

4

D3672-1

Phenolic Washer

**

ll nlogu

Location

Loc Qty

Loc Code

ST060

1214

72229

4

76277

210

80369

500

83608

500

x ✓

D3672-3

Manufactured

No

250

Each

5.0000

4

4

D3672-3

Phenolic Washer

**

ll nlogu

Location

Loc Qty

Loc Code

ST060

5

83238

5

1384361

✓

MS27039C1-09

Purchased

No

250

Each

121.0000

4

4

MS27039C1-09

SCREW

**

ll nlogu

Location

Loc Qty

Loc Code

FP002

28

17831

28

ST293

93

116290

93

x ✓

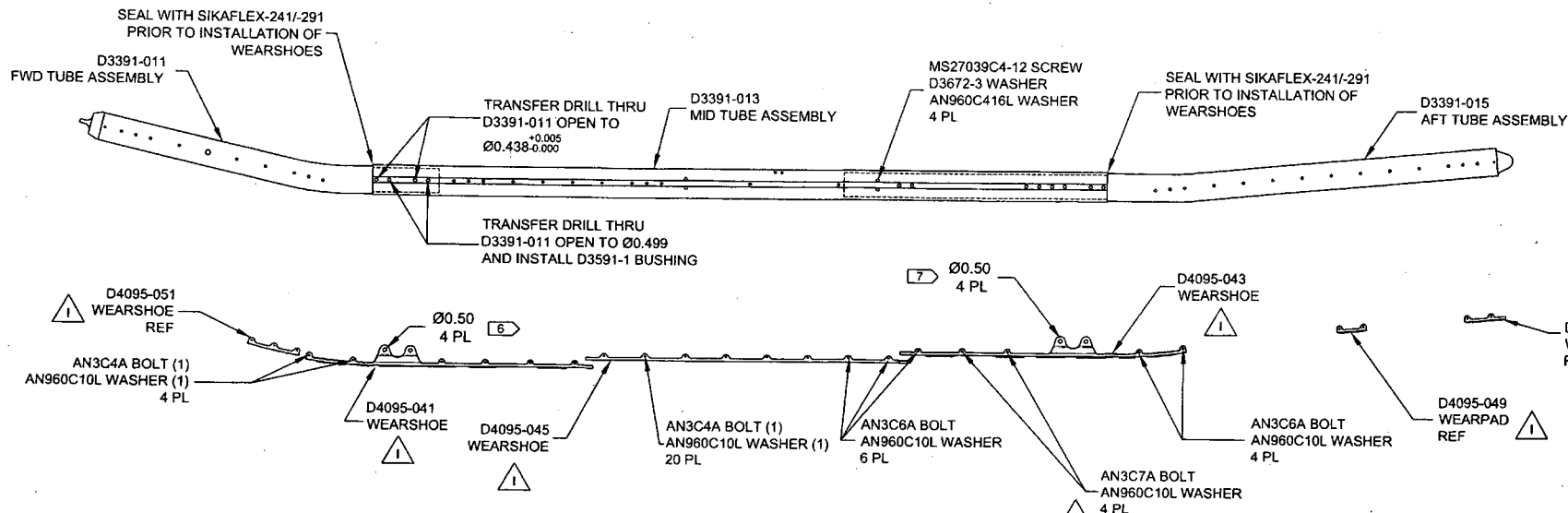
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



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SUBJECT TO AMENDMENT

WITHOUT NOTICE
WORK ORDER

NO. 84515 MLJ
12/05/15



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2011-11-04
ECN# 11-662

D3391-041 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY	PART NUMBER	DESCRIPTION
X	D3391-041	FLOAT SKIDTUBE ASSEMBLY
1	D3391-011	FWD TUBE ASSEMBLY
1	D3391-013	MID TUBE ASSEMBLY
1	D3391-015	AFT TUBE ASSEMBLY
2	D3591-1	BUSHING
4	D3672-3	WASHER
1	D4095-041	WEARSHOE
1	D4095-043	WEARSHOE
1	D4095-045	WEARSHOE
1	D4095-047	WEARSHOE
1	D4095-049	WEARPAD
1	D4095-051	WEARSHOE
24	AN3C4A	BOLT
10	AN3C6A	BOLT
4	AN3C7A	BOLT
38	AN960C10L	WASHER
4	MS27039C4-12	SCREW
4	AN960C416L	WASHER

GENERAL NOTES

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON"
AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES
FOR WEARSHOE INSERTS. CBORE AS NOTED AND INSTALL INSERTS EXCEPT
WHERE INDICATED.
- 6) FIT D4095-041 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH
APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND
TRANSFER DRILL Ø0.50 HOLES FROM SADDLE TO D4095-041
- 7) FIT D4095-043 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH
THE APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND
TRANSFER DRILL Ø0.50 HOLES FROM SADDLE TO D4095-043

I	REMOVE GASKETS AND REPLACE ALL WEARSHOES; PARTS LIST UPDATE, ZN A8-1, ZN A8-2, ZN A6-4, ZN B6-8; LPS-3 COATING REMOVED FROM NOTE 2, ZN A3-1, ZN A3-2, REMOVED INSERT AELS-1032-130, ZN B6-4, B2-4, C7-8, C3-8; REMOVED HOLES, ZN D6-4 ZN D2-4, ZN D7-8, ZN D3-8	XDF	11.10.13
H	DRAWING UPDATED TO CURRENT STANDARDS. SHT 1 PL ADDED D3591-1 BUSHING, ZN C6 Ø0.438 DIM WAS 4 PL ADDED Ø0.499 DIM AND D3591-1 BUSHING. SHT 2 PL ADDED D3591-1 BUSHING, ZN C6 Ø0.438 DIM WAS 4 PL ADDED Ø0.499 DIM AND D3591-1 BUSHING. (FOR FURTHER INFO SEE DSI 9364 & NCR 08-074)	AJS	08.08.20
G	REPLACE NAS INSERTS W/ AELS INSERTS SWITCH TO D3670-XXXX SPACERS FOR INSTALLING FLOAT BAGS, DWG REORGANIZED FOR CLARITY	DC	07.07.31
F	ADD SS WEARSHOE, GASKET REMOVE FWD SADDLE HOLE -0111-021	PH	07.01.18
E	CHANGE TOLERANCE, EASE MANUFACTURE	PH	06.04.25
D	UPDATE TOLERANCE, CHANGE HOLE SIZE	PH	06.01.23
C	LENGTHEN AFT EXTENSION	PH	05.09.27
B	DRAWING UPDATES	PH	05.06.10
A	NEW ISSUE	PH	05.02.07
REV.	DESCRIPTION	BY	DATE
DESIGN	PH	DART AEROSPACE USA, INC KENT, WA	
DRAWN	XDF		
CHECKED		DRAWING NO. D3391	REV. I OF 8 SHEET 1 OF 8
MFG. APPR.		TITLE	SCALE
APPROVED		412 FLOAT SKIDTUBE	NTS
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DATE	11.10.13		

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

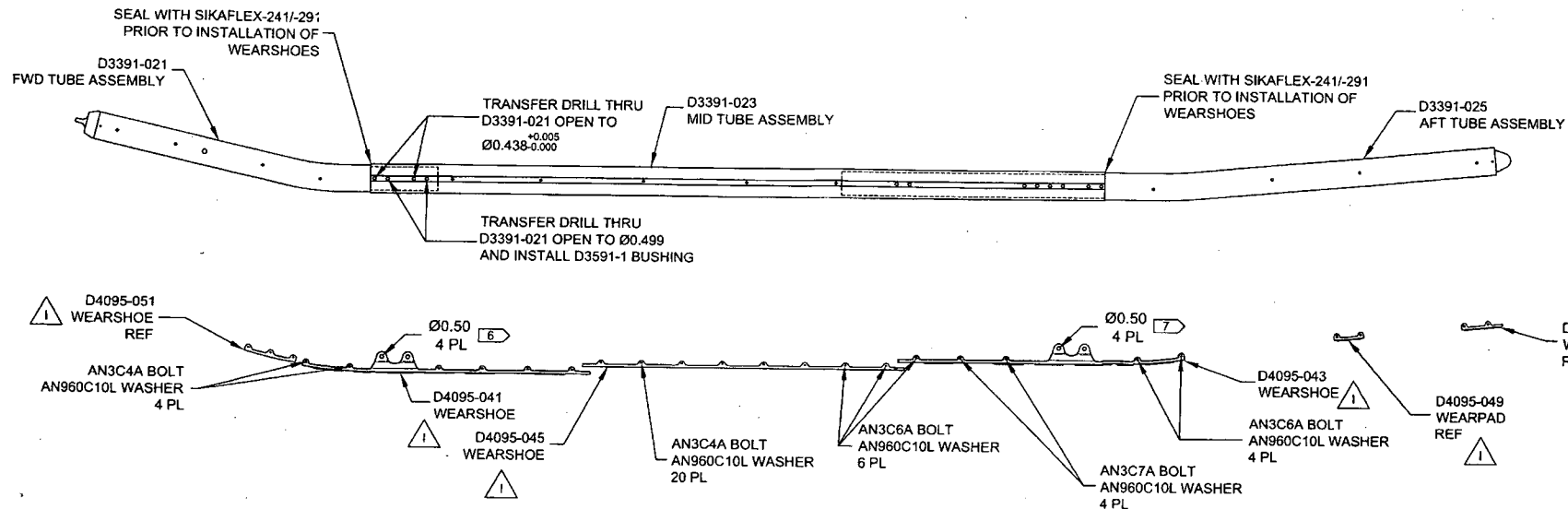
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

84515



D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY	PART NUMBER	DESCRIPTION
X	D3391-043	FLOAT SKIDTUBE ASSEMBLY
1	D3391-021	FWD TUBE ASSEMBLY
1	D3391-023	MID TUBE ASSEMBLY
1	D3391-025	AFT TUBE ASSEMBLY
2	D3591-1	BUSHING
1	D4095-041	WEARSHOE
1	D4095-043	WEARSHOE
1	D4095-045	WEARSHOE
1	D4095-047	WEARSHOE
1	D4095-049	WEARSHOE
1	D4095-051	WEARSHOE
24	AN3C4A	BOLT
10	AN3C6A	BOLT
4	AN3C7A	BOLT
38	AN960C10L	WASHER

GENERAL NOTES

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON"
- 3) AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 4) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) UNITS: INCHES UNLESS OTHERWISE NOTED
- 6) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.
- 7) FIT D4095-041 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND TRANSFER DRILL Ø0.50 HOLES FROM SADDLE TO D4095-041
- 8) FIT D4095-043 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH THE APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND TRANSFER DRILL Ø0.50 HOLES FROM SADDLE TO D4095-043

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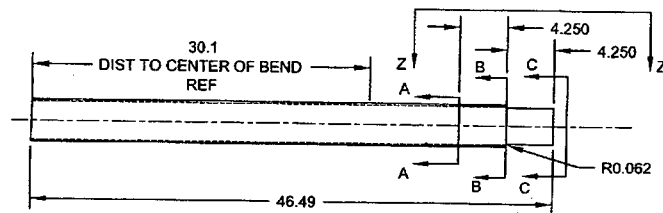
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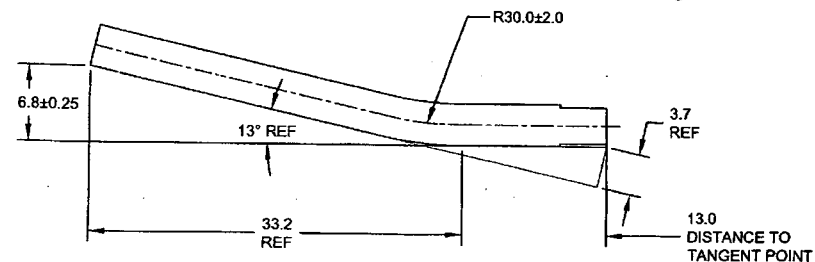
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

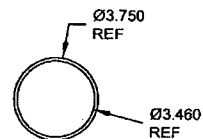
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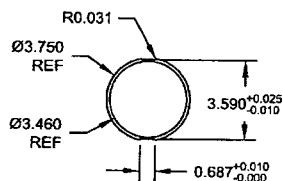
D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



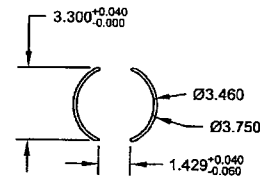
D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)



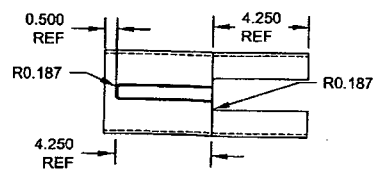
SECTION A-A
SCALE 2X



SECTION B-B
SCALE 2X



SECTION C-C
SCALE 2X



VIEW Z-Z
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

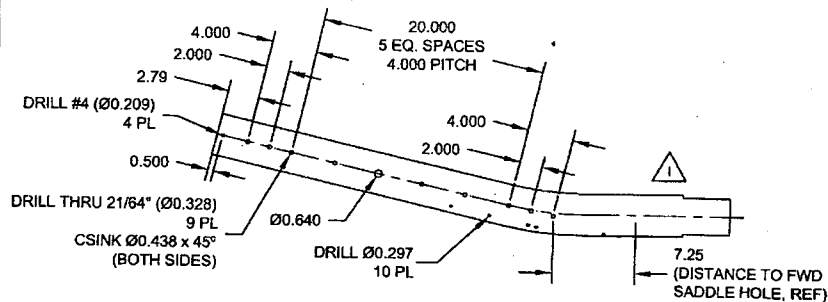
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

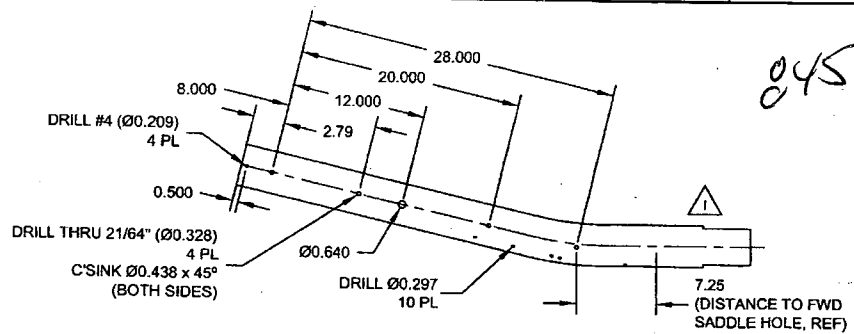
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

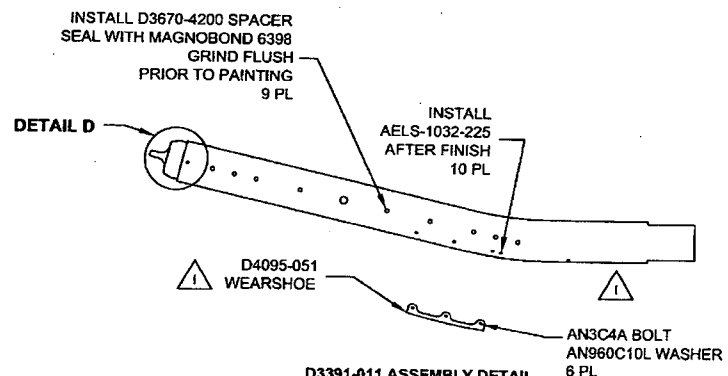
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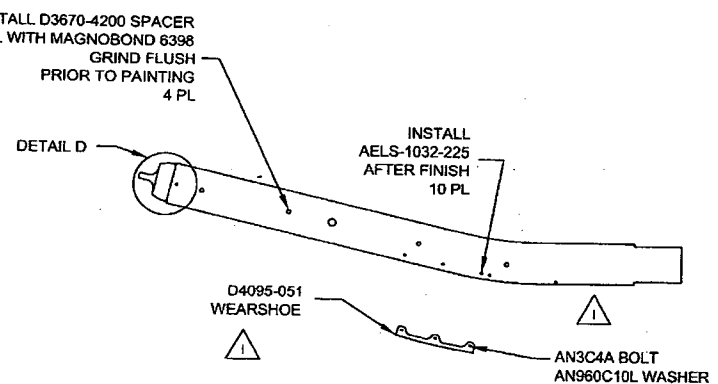
D3391-011 DRILLING DETAIL



D3391-021 DRILLING DETAIL



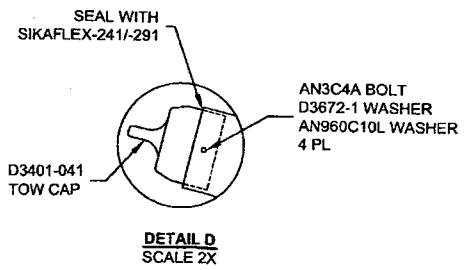
D3391-011 ASSEMBLY DETAIL



D3391-021 ASSEMBLY DETAIL

D3391-011/-021 FWD TUBE ASSEMBLY PARTS LIST

QTY - 011	QTY - 021	PART NUMBER	DESCRIPTION
X	X	D3391-011	FWD TUBE ASSEMBLY
		D3391-021	FWD TUBE ASSEMBLY
1	1	D3401-041	TOW CAP
9	4	D3670-4200	SPACER
4	4	D3672-1	WASHER
1	1	D4095-051	WEARSHOE
1	1	D6013-047	FWD TUBE
10	10	AN3C4A	BOLT
10	10	AN960C10L	WASHER
10	10	AELS-1032-225	INSERT



**DETAIL D
SCALE 2X**

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APPROVED		TITLE	SCALE
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

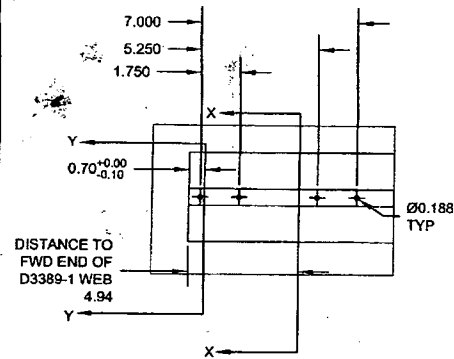
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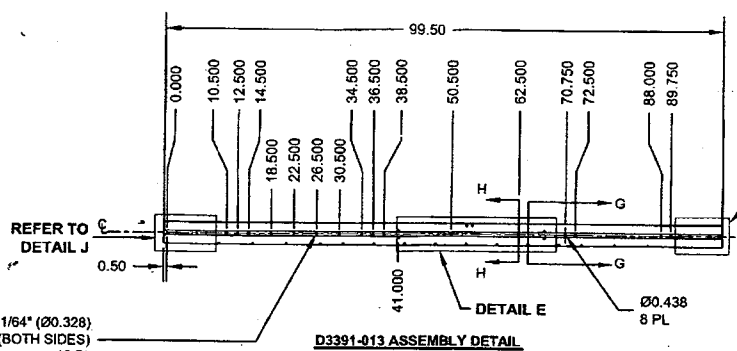
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

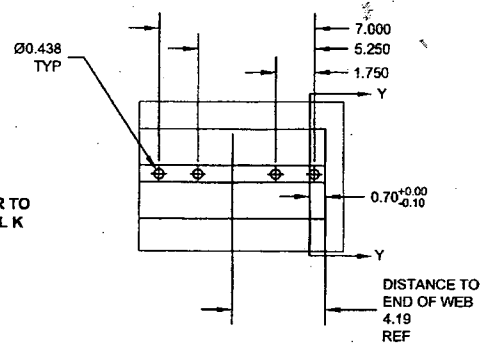
84515



DETAIL J
SCALE 4X



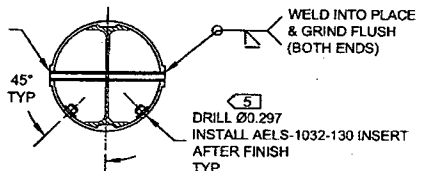
D3391-013 ASSEMBLY DETAIL



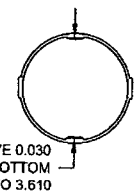
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SCALE 4X



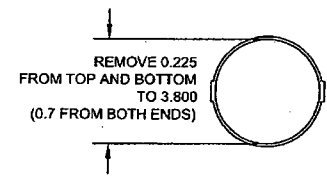
SECTION G-G
SCALE 5X



SECTION H-H
SCALE 5X



SECTION X-X
SCALE 5X



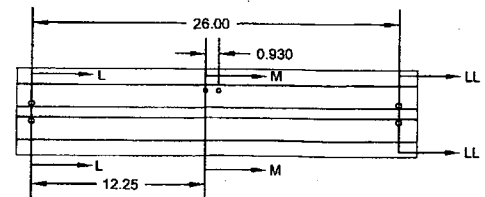
SECTION Y-Y
SCALE 5X

D3391-013 MID TUBE ASSEMBLY PARTS LIST

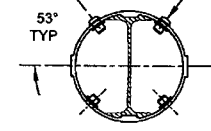
QTY	PART NUMBER	DESCRIPTION
-013		
X	D3391-013	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
4	D3672-1	WASHER
4	D3672-3	WASHER
12	D3681-1	SPACER
24	AELS-1032-130	INSERT
4	ALS4-428-165	INSERT
4	AN960C10L	WASHER
4	AN960C416L	WASHER
4	MS27039C1-09	SCREW
4	MS27039C4-08	SCREW

D3391-013 MID TUBE ASSEMBLY

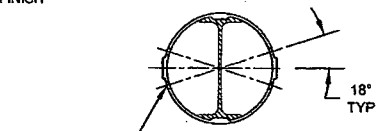
- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
- 3) WELDING: PER DART QSI 004



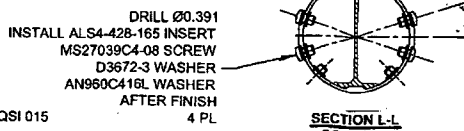
DETAIL E
SCALE NONE



SECTION M-M
SCALE 5X



SECTION L-L
SCALE 5X



SECTION L-L
SCALE 5X

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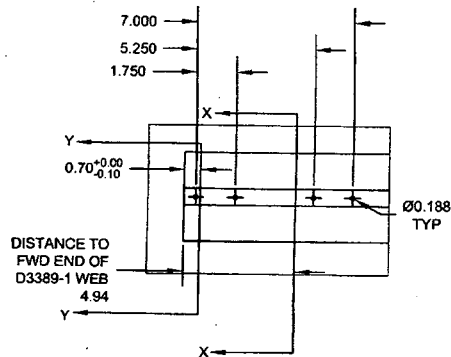
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

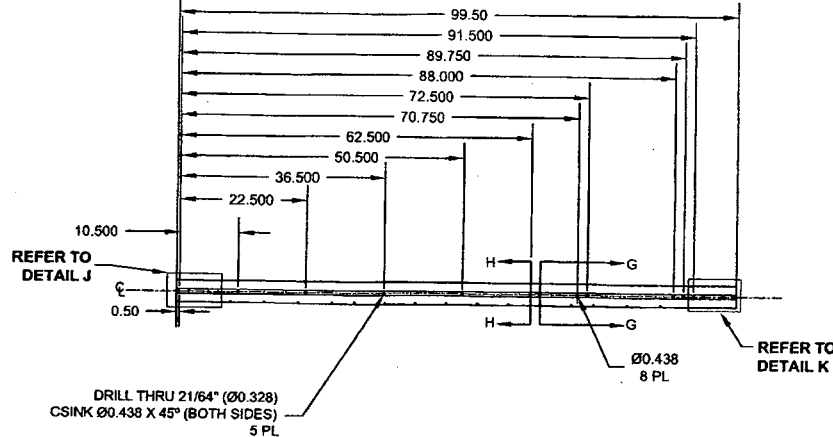
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

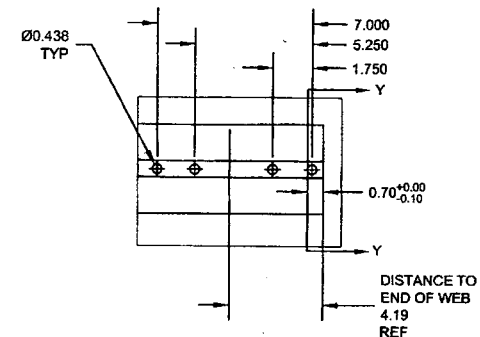
04575



DETAIL J
SCALE 4X



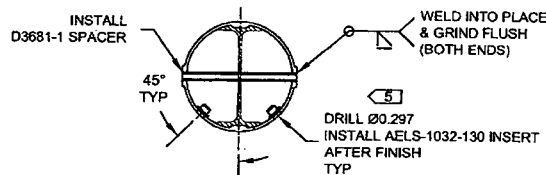
D3391-023 ASSEMBLY DETAIL



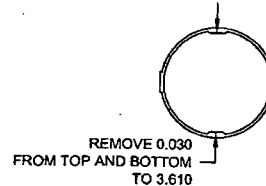
DETAIL K
SCALE 4X



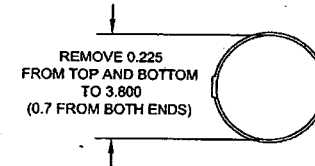
SECTION G-G
SCALE 5X



SECTION H-H
SCALE 5X



SECTION X-X
SCALE 5X



SECTION Y-Y
SCALE 5X

D3391-023 MID TUBE ASSEMBLY PARTS LIST

QTY - 023	PART NUMBER	DESCRIPTION
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

D3391-023 MID TUBE ASSEMBLY

- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015
- 3) WELDING: PER DART QSI 004

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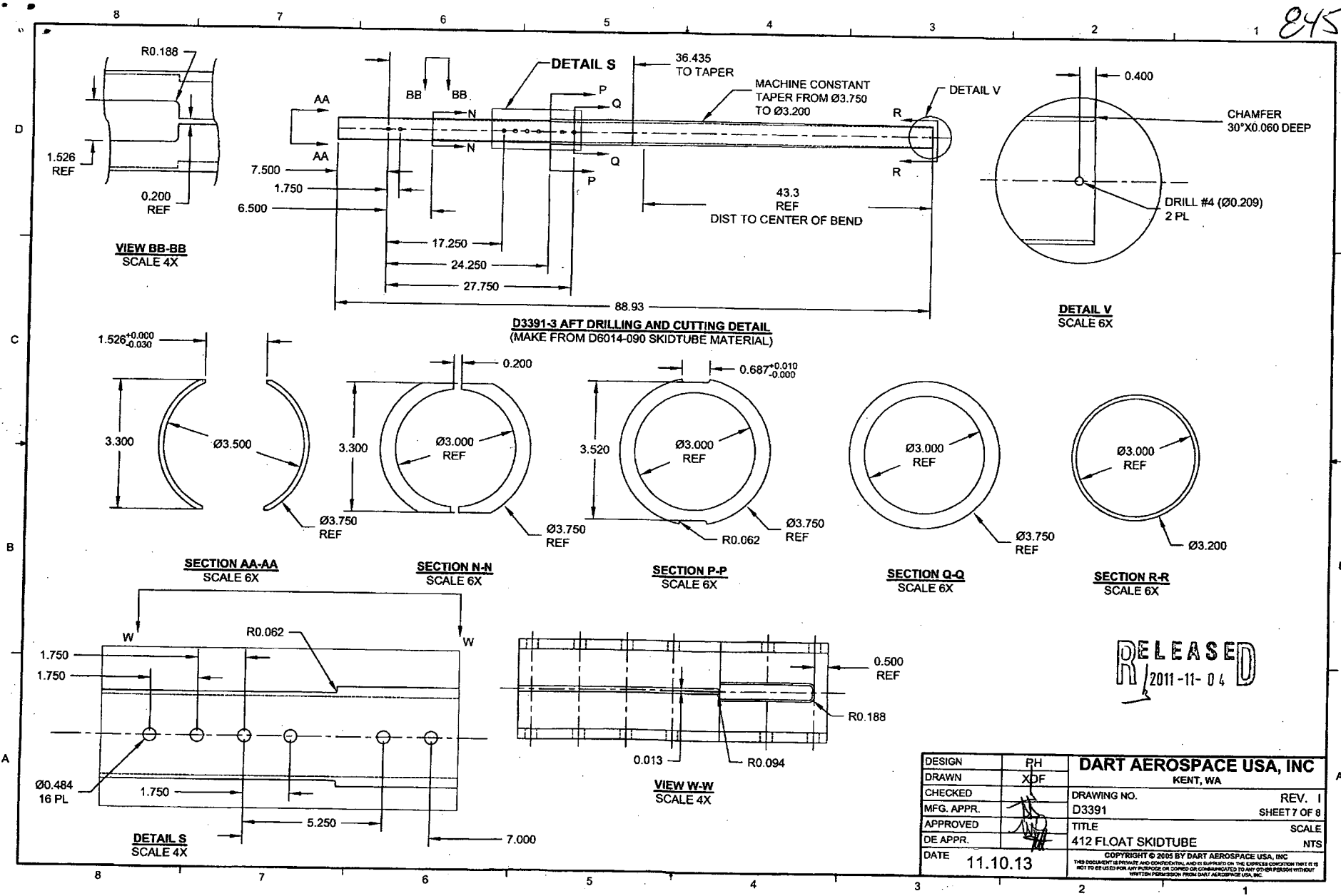
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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84515



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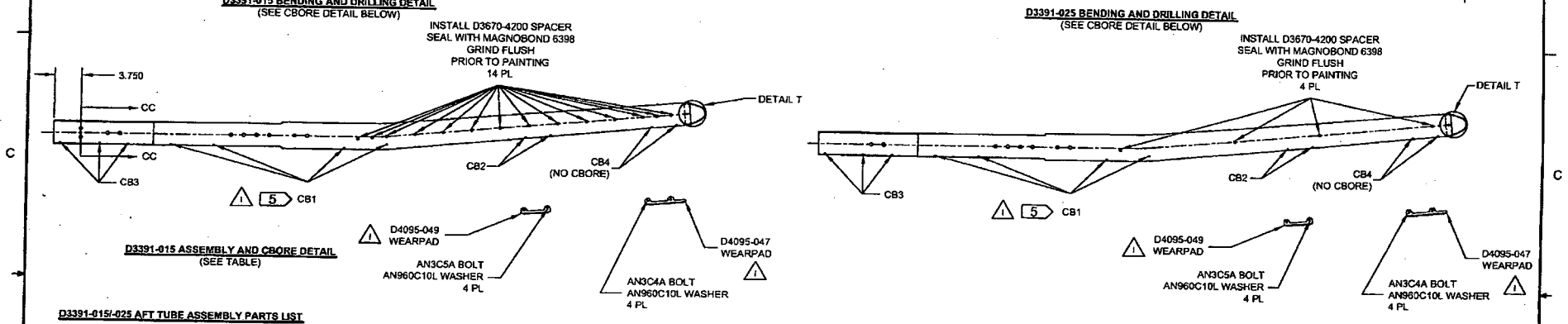
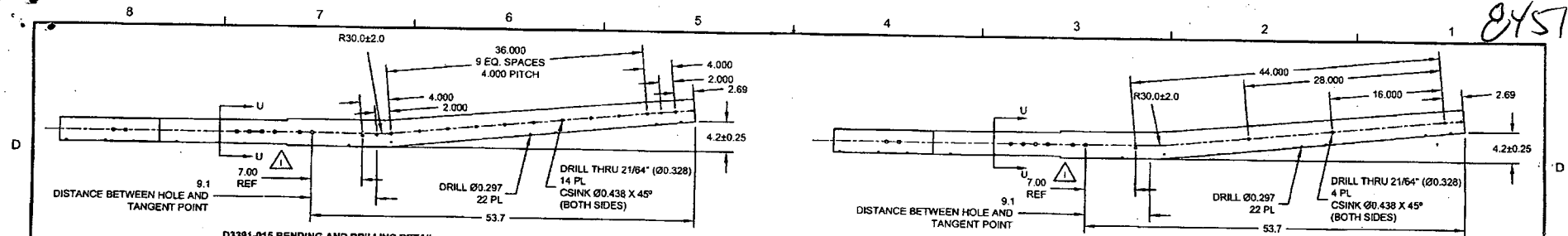
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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84575

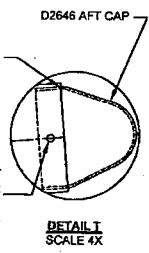
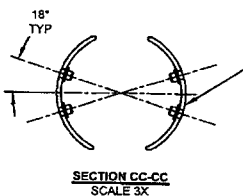
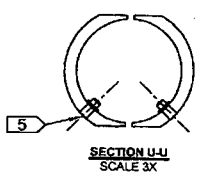


D3391-015-025 AFT TUBE ASSEMBLY PARTS LIST

QTY - 015	QTY - 025	PART NUMBER	DESCRIPTION
X	X	D3391-015	AFT TUBE ASSEMBLY
		D3391-025	AFT TUBE ASSEMBLY
1	1	D2646	AFT CAP
14	4	D3670-4200	SPACER
2	2	D3672-1	WASHER
1	1	D4095-049	WEARPAD
1	1	D4095-047	WEARPAD
1	1	D6014-090	AFT TUBE
14	14	AELS-1032-130	INSERT
8	8	AELS-1032-225	INSERT
4		ALS4-428-165	INSERT
6	6	AN3C4A	BOLT
4	4	AN3C5A	BOLT
10	10	AN960C10L	WASHER

CBORE HOLES MARKED CB1-CB4 AS FOLLOWS AND INSTALL AELS-1032-XXX AFTER FINISH AS NOTED

HOLES MARKED	QTY D3391-015	QTY D3391-025	CBORE	P/N
CB1	8	8	Ø0.430 X 0.170	AELS-1032-225
CB2	4	4	Ø0.430 X 0.170	AELS-1032-130
CB3	6	6	Ø0.430 X 0.040	AELS-1032-130
CB4	4	4	NONE	AELS-1032-130



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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO. 296

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Berclay Elliott
Job number: 85161
Part number: A3391-023
Description: Skid
Welding Process: Tig[☒] Mig[]
Base material: Alum
Current: AC[☒] DC[]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[]
Penetration: pass[☒] fail[]

UNACCEPTABLE

Cracks: pass[☒] fail[]
Undercut: pass[☒] fail[]
Pin holes: pass[☒] fail[]
Overlap (cold lap): pass[☒] fail[]
Porosity (surface): pass[☒] fail[]
Coloration: pass[☒] fail[]

Qualifier David Taylor Date of Test Coupon 12-06-07
Welder Berclay Elliott Date of Test Coupon 12-06-07

The above named individual is qualified in accordance with AWS D17.1.2001 to weld